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**APR 20 2007**

**Technology Center 2600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/787,095

Filing Date: March 13, 2001

Appellant(s): VAN DEN ENDEN, GIJSBERT JOSEPH

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U.S. Philips Corporation  
Appellant

**EXAMINER'S ANSWER**

Art Unit: 2627

This is in response to the appeal brief filed July 3, 2006 appealing from the Office action mailed November 30, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct, i.e., claims 1-20 stand rejected and are currently being appealed.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The appellant noted on page 2, last paragraph that new claim 21, which was refused entry by the March 16, 2006 Advisory Action, defined subject matter similar to claim 1 as originally filed. In response, the examiner notes that prosecution has been closed with the Final Rejection of November 30, 2005 and no allowable features common to both claims have been found. Furthermore, while both claims recite similar subject matter, they have varying scopes, which would have required further consideration by the examiner if claim 21 had been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner: Rejection of claims 1-20 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,807,210	Kaku et al.	2-1989
4,536,864	Van Rosmalen	8-1985
5,712,839	Aoki	1-1998
5,184,343	Johann et al.	2-1993

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claim Rejections - 35 USC § 112, second paragraph**

Claims 1-6 & 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: e.g., means or structural elements for providing the claimed results, i.e., recording two different states, adjusting a power level, measuring from the spot of only one of the states, controlling the power for writing both states, etc.

Claim Rejections - 35 USC § 102

Claims 1, 2, 6-8 & 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoki (US 5,712,839).

In regard to claim 1, Aoki discloses an electronic optical recording device (Figure 2) for optical recording on rewritable media (MD), with which two different states (note “phase-change-type”, “erase power” and “recording power” in column 4, lines 52-61) can be recorded by adjusting a power level of a laser diode (1) depending on information content to be generated on the media, characterized in that during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states (column 4, lines 66-67: “when the light source 1 radiates the light having the bias power (the erase power)”), a reflection is measured from the spot of only one of the states (column 4, line 62 through column 5, line 1: note “when the light source 1 radiates the light having the recording power, the reflection light from the recording medium is **not monitored**” and “when the light source 1 radiates the light having the bias power (the erase power), the reflection light from the recording medium is **monitored**”) and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states (column 6, lines 58-61).

In regard to claim 2, Aoki discloses that the reflection is measured at spots where a piece already in a highly reflecting state is overwritten with a highly reflecting state (note “phase-change-type” and “erase power” in column 4, lines 52-61, which “erase power” is known in the art to provide a highly reflecting state when used in a phase-change-type recording medium).

In regard to claim 6, Aoki discloses that the reflection is measured when a highly reflective state is written (note “phase-change-type” and “erase power” in column 4, lines 52-61, which “erase power” is known in the art to provide a highly reflective state when used in a phase-change-type recording medium).

In regard to claim 7, Aoki discloses an electronic optical recording device (Figure 2) for optical recording on rewritable media (MD) that records by adjusting a power level of a laser diode (1) to one of two different states (note “phase-change-type”, “erase power” and “recording power” in column 4, lines 52-61) depending on information content to be recorded on the media, comprising: means (2 & 3) for measuring a reflection from a written spot of only one of the states during writing (column 4, line 62 through column 5, line 1: note “when the light source 1 radiates the light having the recording power, the reflection light from the recording medium is not monitored” and “when the light source 1 radiates the light having the bias power (the erase power), the reflection light from the recording medium is monitored”); and means (6 & 7) for controlling the power of the laser diode to be a measured value of the reflection for writing both states (column 6, lines 58-61).

Claims 8 & 12 have limitations similar to those of claims 2 & 6; thus, they are rejected on the same basis.

#### Claim Rejections - 35 USC § 103

Claims 3-5, 9-11 & 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Johann et al. (US 5,184,343).

For a description of Aoki, see the rejections above. Furthermore, Aoki discloses: in regard to claim 3, that a DC level detector (Figure 2, element 3) measures reflected light; in regard to claim 4, that the DC level detector measurement is compared to a reference value (output of element 4); in regard to claim 5, that the power of the laser diode is adjusted if a comparison of the DC level detector to the reference value indicates a deviation (column 4, lines 48-51); in regard to claim 14, that the deviation results in the means for controlling the power of the laser diode to be readjusted (see last five lines of abstract); in regard to claim 15, that the laser diode as readjusted is retained for writing low-reflection states (column 5, lines 31-42); and in regard to claim 16, that the rewriteable media is channel coded (it is known in the art that optical information is typically channel coded prior to being recorded, e.g., eight-to-fourteen modulation; therefore, this feature is inherently taught by Aoki).

Aoki does not disclose: in regard to claims 3-5, measuring reflected light using "a signal peak detector"; and in regard to claim 13, that the deviation occurs as a result of soiling of the rewritable media.

Johann et al. disclose: in regard to claims 3-5, measuring reflected light using a signal peak detector (Figure 3, element 30); and in regard to claim 13, a deviation occurs as a result of soiling of an optical disk (apparent from the title).

In regard to claims 3-5, at the time of invention by the Applicant, it was well known to use either a DC level detector or a signal peak detector for the same purpose of measuring reflected light; therefore, one of ordinary skill in the art would have recognized that either techniques are obvious variants of each other. Therefore, it would

have been obvious to one of ordinary skill in the art at the time of invention by the Applicant to have measured the reflected light of Aoki using the signal peak detector of Johann et al. because both techniques are art-recognized equivalent alternative techniques used for the same purpose of measuring reflected light, and therefore, one of ordinary skill in the art would have expected the Applicant's invention to perform equally well with either technique.

In regard to claim 13, it would have been obvious to one of ordinary skill in the art at the time of invention by the Applicant to have applied the teachings of Johann et al. to the device of Aoki, the motivation being to compensate for errors caused by dust particles on the surface of the disk (see abstract).

Claims 9-11 & 17-20 have limitations similar to those of claims 3-5 & 13-16; thus, they are rejected on the same basis.

#### **(10) Response to Arguments**

(a) The rejection of claims 1-20 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement has been withdrawn; therefore, the appellant's arguments on pages 5-9 are now moot.

(b) The appellant argues on page 10, last paragraph through page 11, paragraph 1 that claims 1-6 and 17-20 are compliant with the provisions of 35 U.S.C. § 112, second paragraph, pointing out that the subject matter to which the examiner refers is found within the rejected claims. The examiner disagrees. Claim 1, which is an apparatus claim, recites an electronic optical recording device, but does not positively recite the components of the electronic optical recording device. The recitation "*for optical*



*recording on rewritable media, with which two different states can be recorded by adjusting a power level of a laser diode depending on information content to be generated on the media*” is nothing more than a recitation of function and intended use in the preamble. The recitation “*characterized in that during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states*” is nothing more than a recitation of desired results, which does not provide structure to the claimed apparatus, and therefore renders the claim incomplete. It should be noted that dependent claims 2-6 & 17-20 have similar deficiencies.

(c) With respect to the rejection of claims 1, 2, 6-8 & 12 under 35 U.S.C. § 102(b) as being anticipated by Aoki (U.S. Patent No. 5,712,839), the appellant argues on page 12, paragraph 2 that *there is no disclosure or suggestion within Aoki for using a measured value of the reflection for controlling the power of the laser diode for writing of both states*. The examiner disagrees. Aoki teaches in column 4, line 66 through column 5, line 1 that “when the light source 1 radiates the light having the bias power (the erase power), the reflection light from the recording medium is monitored”, i.e., measuring the value of the reflection. Aoki then teaches in column 6, lines 58-61 that “both the bias power and the recording power of the light source 1 can be controlled using the DC level of the reflection signal detected when the light source 1 radiates the light having the bias power”, i.e., controlling the power of the laser diode for writing both states.

(d) The appellant further argues on page 12, paragraph 3 that *Aoki provides no teaching related to monitoring reflected light during writing periods* and that *Aoki does not monitor reflected beams during recording of one of the states but instead discloses monitoring during periods that the erase power is implemented for the laser diode*. In response, the Board is directed to column 4, line 62 through column 5, line 16 of Aoki, which teach a power control system provided in the recording apparatus comprising a light source for recording. The claimed “during writing periods” is interpreted by the examiner as corresponding to Aoki’s “recording”. Consistent with the teachings of the prior art, it is well known that “recording” to phase-change recording media (which Aoki uses) involves irradiating a light source having a power which is dynamically varied depending on whether a “crystalline” or an “amorphous” state is to be written. Unlike “write-once” recording media, which are capable of recording only once, phase-change recording media are capable of “rewriting” or “overwriting” of data. In a case where data has already been written into a phase-change recording medium, this data can be erased by recording new data on the old data, i.e., “overwriting” (The Board is directed to Kaku et al. (US 4,807,210), column 2, line 32 through column 3, line 13, which is relied upon by the examiner as evidence). This overwriting involves changing a crystalline state to an amorphous state (using a laser with recording power), and changing an amorphous state to a crystalline state (using a laser with erasing power). At any instance “during writing periods”, it is expected that the light source uses either a “recording” or “erasing” power.

Furthermore, claim 1, line 5 recites “during writing of the states”. In light of appellants own claim language, the appellant concedes that both cases of changing a

crystalline to an amorphous state and changing an amorphous state to a crystalline state are considered as "writing". Therefore, the examiner maintains that Aoki discloses that the reflection is measured *during writing*.

(e) The appellant alleges on page 15 paragraph 2 that *the examiner attempts to insert definition that the erase state is the same as the highly reflective state*. The examiner never made such an attempt; therefore, the allegation is false.

(f) The appellant presents on page 13, paragraph 1 through page 17, paragraph 1 and page 18, paragraph 3 through page 19, paragraph 3 arguments similar to those discussed in items (d) & (e) above, which arguments are not persuasive as noted.

(g) With respect to the rejection of claims 3-5, 9-11 & 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Aoki in view of Johann et al. (U.S. Patent No. 5,184,343), the appellant argues on page 19, last paragraph through page 20, paragraph 1 that *there is no disclosure or suggestion within Johann et al. for during writing of the states...* In response, the examiner notes that the Aoki reference was relied upon to teach these features.

(h) The appellant further argues on page 20, paragraphs 2-5 that *the combination of Aoki with Johann et al. is an improper combination, that this modification would render Aoki unsatisfactory for its intended purpose, that the proposed modification or combination of the prior art would change the principle of operation of the cited prior art references being modified, and that there is no reasonable expectation of success within the references*. The examiner disagrees. As noted in the rejection it was well known in the art at the time of the invention to use either a DC level detector (as taught by Aoki) or

a signal peak detector (as taught by Johann et al.) for the same purpose of measuring reflected light, and both techniques are art-recognized equivalent alternatives, i.e., there is a reasonable expectation of success. Therefore, it would have been obvious to one of ordinary skill in the art to have used the signal peak detector to measure the reflection in the device of Aoki. Since the proposed modification only involves using an alternative well known component in place of another well known component, the modification will neither render Aoki unsatisfactory for its intended purpose nor change the principle of operation of the device of Aoki. Therefore, the examiner maintains that the combination is proper.

(i) The appellant presents on page 20, last paragraph through page 21, paragraph 4 arguments similar to those discussed in items (d) & (h) above, which arguments are not persuasive as noted.

(j) In response to appellant's argument on page 21, last paragraph through page 22, paragraph 1 that there is no disclosure or suggestion for the electronic device wherein the signal peak detector measurement is compared to a reference value, the Board is directed to Figure 2 of Aoki, in which the output of target setting unit 4 is read to correspond to the claimed "reference value" which is compared to the output of DC level detecting unit 3, which measures reflection. Since the Johann et al. reference is relied upon to teach a signal peak detector to measure reflection, the combination of Aoki and Johann et al. will directly result with "the signal peak detector measurement is compared to a reference value".

(k) In response to appellant's argument on page 22, paragraph 2 that there is no disclosure or suggestion for *wherein the power of the laser diode is adjusted if a comparison of the signal peak detector to the reference value indicates a deviation*, the Board is directed to column 4, lines 48-51 of Aoki, which teaches adjusting the power of the laser diode if comparison of the output of DC level detecting unit 3 and the reference value indicates a deviation. Since the Johann et al. reference is relied upon to teach a signal peak detector to measure reflection, the combination of Aoki and Johann et al. will directly result with "the power of the laser diode is adjusted if a comparison of the signal peak detector to the reference value indicates a deviation".

(l) In response to appellant's argument on page 22, paragraph 3 that there is no disclosure or suggestion for *wherein the means for measuring the reflection further comprises a signal peak detector that measures reflected light*, the examiner notes that the Johann et al. reference was relied upon to teach this feature, see Figure 3, element 30, and it is rendered obvious in combination with Aoki, as noted in item (h) above.

(m) In response to appellant's argument on page 22, paragraph 4 that there is no disclosure or suggestion for *wherein the peak detector measurement is compared to a reference value*, see item (j) above.

(n) In response to appellant's argument on page 22, paragraph 5 through page 23, paragraph 1 that there is no disclosure or suggestion for *wherein the power of the laser diode is adjusted if a comparison of the signal peak detector compared to the reference value indicates a deviation*, see item (k) above.

- (o) In response to appellant's argument on page 23, paragraph 2 that there is no disclosure or suggestion for *wherein the deviation occurs as a result of soiling of the rewritable media*, the examiner notes that the Johann et al. reference was relied upon to teach this feature, see title of the Johann et al. reference. In combination with Aoki, this feature is rendered obvious, as noted in the rejection.
- (p) In response to appellant's argument on page 23, paragraph 3 that there is no disclosure or suggestion for *wherein the deviation results in the means for controlling the power of the laser diode to be readjusted*, the Board is directed to the last five lines of the abstract of Aoki, which indicates that "the power control system further has a control unit for controlling the first power of the light emitted from the light source so that a level of the reflection signal output from the detecting means is controlled at a predetermined target level".
- (q) In response to appellant's argument on page 23, paragraph 4 that there is no disclosure or suggestion for *wherein the laser diode as readjusted is retained for writing low-reflection states*, the Board is directed to column 5, lines 31-42 of Aoki, which mentions that "if the optimized bias power has been calculated once as described above, it is not necessary to calculate the optimized bias power again", i.e., the adjustment is "retained".
- (r) In response to appellant's argument on page 23, last paragraph that there is no disclosure or suggestion for *wherein the rewritable media is channel coded*, the examiner notes that this feature is inherent in any optical recording system. It is well known in the art that information to be written in an optical disk is channel coded using eight-to-

fourteen modulation prior to being written in to the optical disk. See, for example, Van Rosmalen (US 4,536,864), column 7, lines 23-43.

(s) In response to appellant's argument on page 24, paragraph 1 that there is no disclosure or suggestion for *wherein the deviation occurs as a result of soiling of the rewritable media*, see item (o) above.

(t) In response to appellant's argument on page 24, paragraph 2 that there is no disclosure or suggestion for *wherein the deviation results in the means for controlling the power of the laser diode to be readjusted*, see item (p) above.

(u) In response to appellant's argument on page 24, paragraph 3 that there is no disclosure or suggestion for *wherein the laser diode as readjusted is retained for writing low-reflection states*, see item (q) above.

(v) In response to appellant's argument on page 24, paragraph 4 that there is no disclosure or suggestion for *wherein the rewritable media is channel coded*, see item (r) above.

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

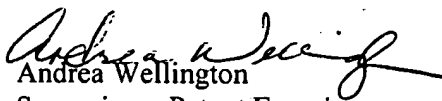
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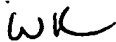
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